

P a t e n t C l a i m s :

1. An electrical device for generating a multi-rate PN
5 sequence comprising:
 - sequence generation means adapted to output a plurality of sequence values on the basis of a step control signal (S_t),
 c h a r a c t e r i z e d in that said device further
10 comprises
 - selection means adapted to select one of said plurality of sequence values on the basis of a select value (M_t), and
 - step control means adapted to provide said step control
15 signal (S_t).

2. An electrical device according to claim 1,
 c h a r a c t e r i z e d in that said select value (M_t) is provided on the basis of a clock control value/signal
20 (C_t) and a previously generated select value (M_{t-1}).

3. An electrical device according to claim 1 or 2,
 c h a r a c t e r i z e d in that said step control signal (S_t) is provided on the basis of a clock control
25 value/signal (C_t) and a previously generated select value (M_{t-1}).

4. An electrical device according to claim 1, 2 or 3,
 c h a r a c t e r i z e d in that
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 - said plurality of sequence values is two,
 - said select value (M_t) is calculated as $M_t = (C_t + M_{t-1}) \text{ MOD } 2$, and
 - said step control signal (S_t) is calculated as $S_t = (C_t + M_{t-1}) \text{ DIV } 2$.

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- said plurality of sequence values is N, where N is at least 3,

- said step control signal (S_t) is calculated as $S_t = (C_t + S_t) \text{ DIV } N$.

15 7. An electrical device according to claim 6,
c h a r a c t e r i z e d in that said sequence
generation means comprises:

where each delay element (103) is connected to another and two of them are additionally connected to themselves via a sum element (203, 204).

30 9. A device according to claim 8, c h a r a c t e r -
i z e d in that said portable device is a mobile
telephone.

10. A device according to any one of the previous claims,
35 c h a r a c t e r i z e d in that said electrical device
is used in a stationary communication device.

11. A method of generating a multi-rate PN sequence comprising the step of:

- generating a plurality of sequence values on the basis
5 of a step control signal (S_t),
c h a r a c t e r i z e d in that the method further comprises the steps of:
 - providing a select value (M_t),
 - providing the step control signal (S_t), and
 - 10 • selecting one of said plurality of sequence values on the basis of the select value (M_t).

12. A method according to claim 11, c h a r a c t e r -
i z e d in that said select value (M_t) is provided on
15 the basis of a clock control value/signal (C_t) and a previously generated select value (M_{t-1}).

13. A method according to claim 11 or 12, c h a r a c -
t e r i z e d in that said step control signal (S_t) is
20 provided on the basis of a clock control value/signal (C_t) and a previously generated select value (M_{t-1}).

14. A method according to claim 11, 12 or 13,
c h a r a c t e r i z e d in that
25 • said plurality of sequence values is two,
• said select value (M_t) is calculated as $M_t = (C_t + M_{t-1}) \text{ MOD } 2$, and
• said step control signal (S_t) is calculated as $S_t = (C_t + M_{t-1}) \text{ div } 2$.

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15. An method according to claim 11, 12 or 13,
c h a r a c t e r i z e d in that
• said plurality of sequence values is N , where N is at least 3,
35 • said select value (M_t) is calculated as $M_t = (C_t + M_{t-1}) \text{ MOD } N$, and

16. A method according to any one of the previous claims,
5 c h a r a c t e r i z e d in that said plurality of
sequence values is generated by a windmill polynomial
sequence generator.
17. A method according to any one of the previous claims,
10 c h a r a c t e r i z e d in that said method is used in
a portable device.
18. A method according to claim 17, c h a r a c t e r -
i z e d in that said method is used in a mobile
15 telephone.
19. A method according to any one of the previous claims,
c h a r a c t e r i z e d in that said method is used in
a stationary communication device.

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